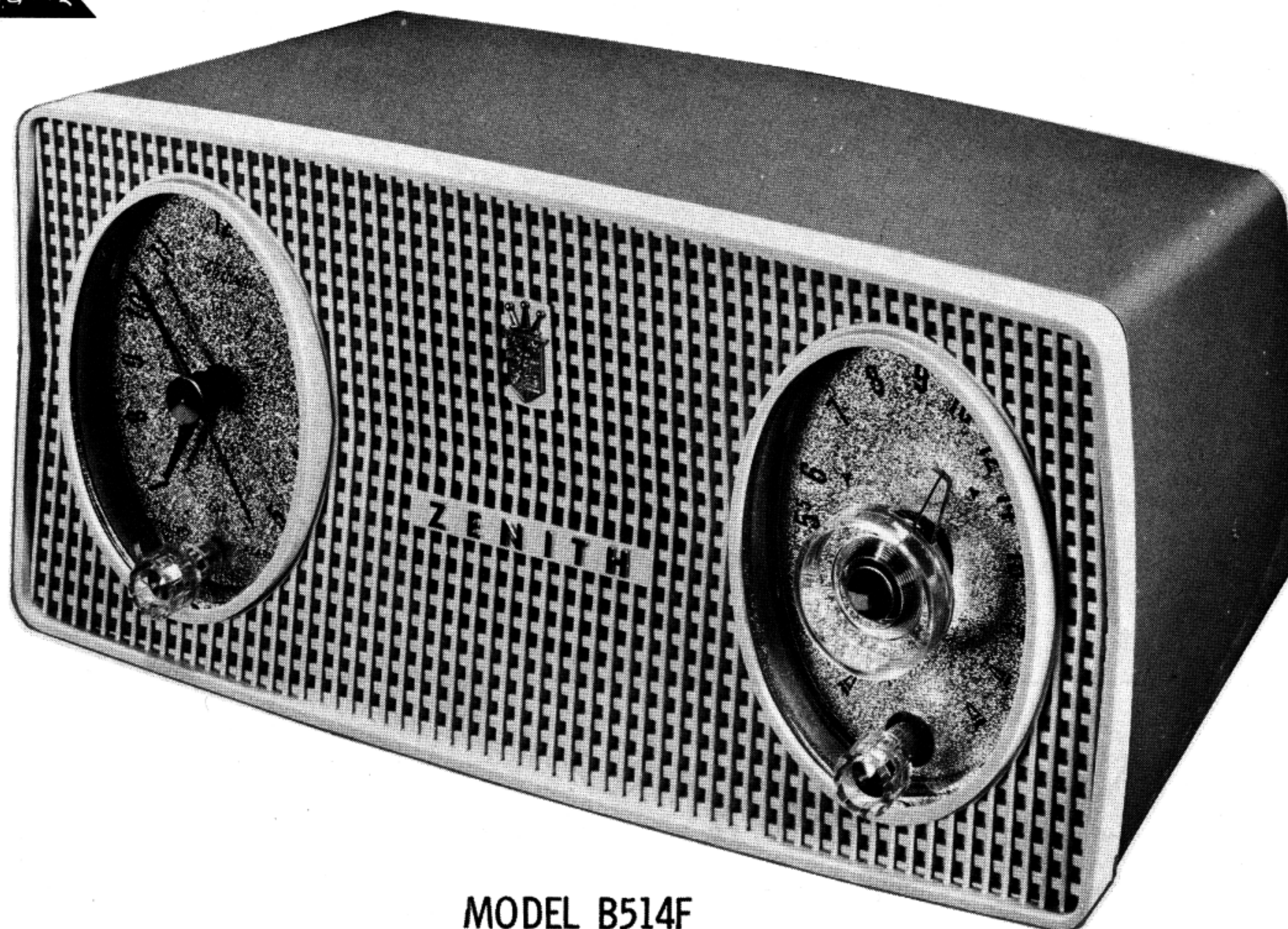




ZENITH MODELS B509C, F, P, V, B511B, L, P, V, B514C, F, V, W, B515B, G, P, Y (Ch. 5B04, 5B06, 5B10, 5B11)



MODEL B514F

ZENITH MODELS B509C, F, P, V, B511B, L, P, V, B514C, F, V, W, B515B, G, P, Y (Ch. 5B04, 5B06, 5B10, 5B11)

TRADE NAME	Zenith Models B509C, B509F, B509P, B509V (CH. 5B11); B511B, B511L, B511P, B511V (CH. 5B10); B514C, B514F, B514V, B514W, B515B, B515G, B515P, B515Y (CH. 5B04 or 5B506)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	AC Operated 5 Tube AM Receiver (B509 & B511 Series Are Not Clock Versions)		
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles	RATING	24 Watts, .30 Amp. @117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	535 - 1620KC		

NOTE: TUNING KNOB IS CAPTIVE AND REMAINS WITH CABINET. SLIDE CHASSIS FROM KNOB.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT						
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.						
Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B-.						
Suggested alignment tools:						
A1 thru A4, A6.....GENERAL CEMENT #8606, 8606L, 8282, 9295						
WALSCO #2526, 2543, 2544, 2545						
A5, A7.....GENERAL CEMENT #5004, 5008, 5009						
WALSCO #2520						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .5mfd	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400v Mod.)	Point of non-interference	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Loop	1600KC	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	600KC	600KC	"	A6	"
4.	"	1400KC	Tune to 1400KC signal	"	A7	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of J11

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6		V4	Output Rectifier	50C5	
V2	IF Amplifier	12BA6		V5	Rectifier	35W4	
V3	Det-AVC-AF Amp.	12AV6					

ELECTROLYTIC CAPACITORS

ITEM No.		RATING		REPLACEMENT DATA		REPLACEMENT DATA		REPLACEMENT DATA	
		CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNEILL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1A	80	150	150	22-2351 ①	AFH2-19	XB0181	FP216	TMD-16	TVL-2442.1
B	40	150							

① Chassis 5B10 & 5B11 use 60-20mfd (Part #22-2202).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.		RATING		REPLACEMENT DATA		REPLACEMENT DATA		REPLACEMENT DATA	
		CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNEILL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C2	100	500		22-5	BPD-0001	DD-101	LIOT1	CNO-310	5GA-T1
C3	10000	500		22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1
C4	.047	200		22-2792	P288N-047	DF-503	CUB4S47	GEM-4147	4TM-S47
C5	.047	200		22-2792	P288N-047	DF-503	CUB4S47	GEM-4147	4TM-S47
C6	10000	500		22-3	BPD-01	DD-103	BYA10S1	B-110	5HK-S1

CONTROLS

ITEM No.		RATING		REPLACEMENT DATA		REPLACEMENT DATA		REPLACEMENT DATA	
		RESIST-ANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	1/2		63-4390 ①	B-59	A47-500K-S	Q11-133	TA55L	Volume
B	Shaft				Not Req.	KSS-3	Not Req.	Not Req.	

① Part #63-4440 (with switch) used in chassis 5B10; Part #63-4401 (with switch) used in chassis 5B11.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.		RATING		REPLACEMENT DATA		REPLACEMENT DATA		REPLACEMENT DATA	
		OHMS	WATT	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R2	22K			63-1842					
R3	47K			63-1730					
R4	2.2meg			63-1926					

Note 1. Not used in chassis 5B11

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ZENITH PART No.	REPLACEMENT DATA
K1	Audio Coup. Net.	250mmf, 220mmf, 5000mmf, 5000mmf, 470K, 470K, 6.8meg	105-43 ①	Aerovox Centralab Cornell-Dubilier Sprague

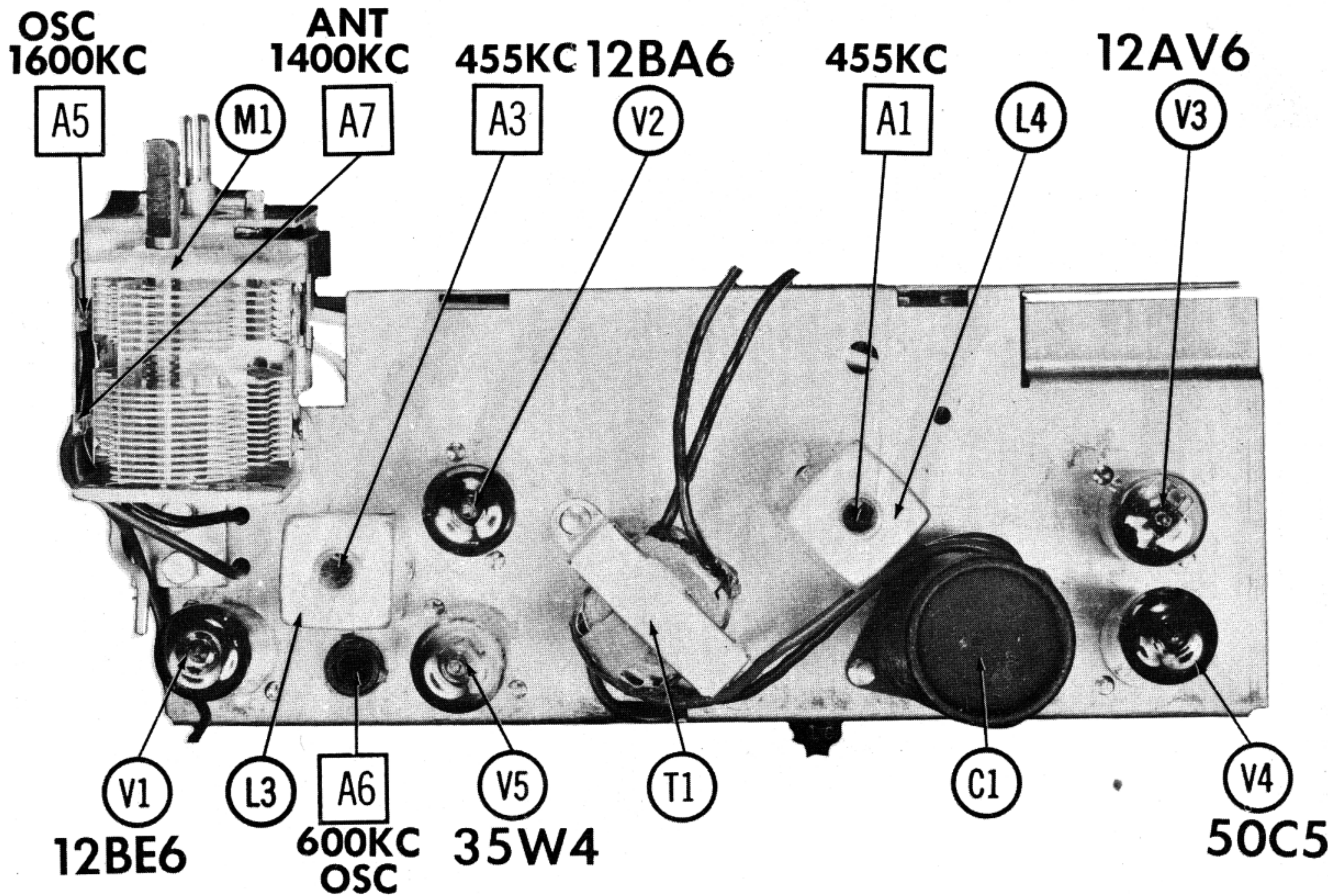
① Some versions may use separate items.

COILS (RF-IF)

ITEM No.		REPLACEMENT DATA		REPLACEMENT DATA	
		ZENITH PART No.	Meissner PART No.	Miller PART No.	Ram PART No.
L1	Loop Ant.	S-44171 ①	14-1074	13-PC1	RF-4
L2	Osc. Coil	S-43910	16-6780	13-PC2	RF-4
L3	Input IF	95-1504	BC-356	BC-357	
L4	Output IF	95-1636	BC-357	13-PC2	

① Part No. S-44383 used in chassis 5B11.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES	
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.		Triad PART No.
T1	2400Ω Tap @ 3% (100Ω)	3-4Ω	95-1627 ①	Z1103 ②	A-3031②			24S50A ③	S-16X ②	① Part #95-1626 (No tap) used in chassis 5B10, 5B11 ② Drill new mounting hole

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	
SP1	4" 3 1/2"	PM	3-4Ω	49-838 ① 49-865 ②	① Used in chassis 5B04, 5B06, 5B10 ② Used in chassis 5B11

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Cap.	22-3088	2 Section, Ch. 5B04, 5B06, 5B10 (Ant. 19-364mmf, Osc. 6-95mmf.)
M2	Tuning Cap.	172-3	2 Section, Ch. 5B11
	Clock	172-4	Model B514 Series Model B515 Series

CABINETS & CABINET PARTS

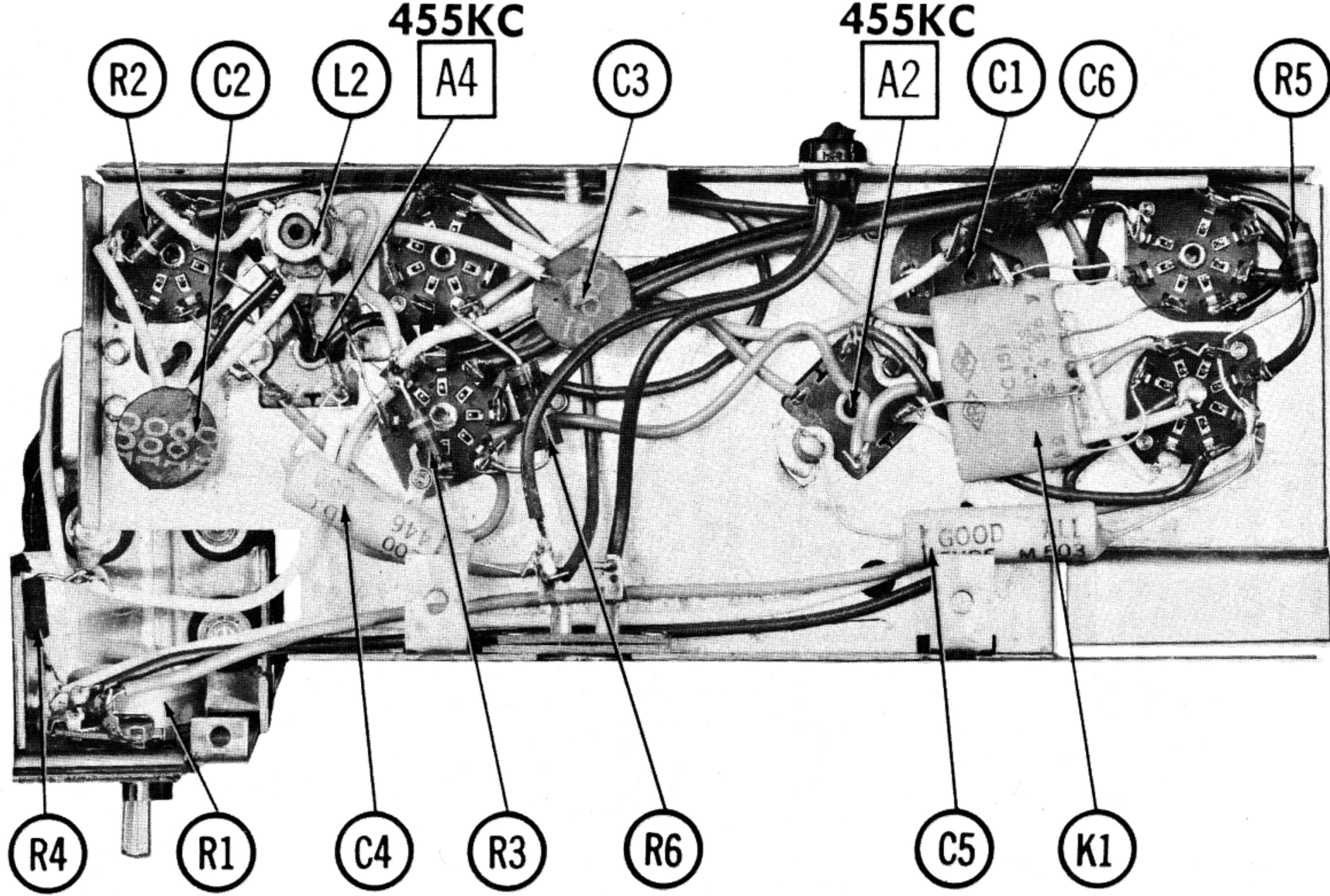
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

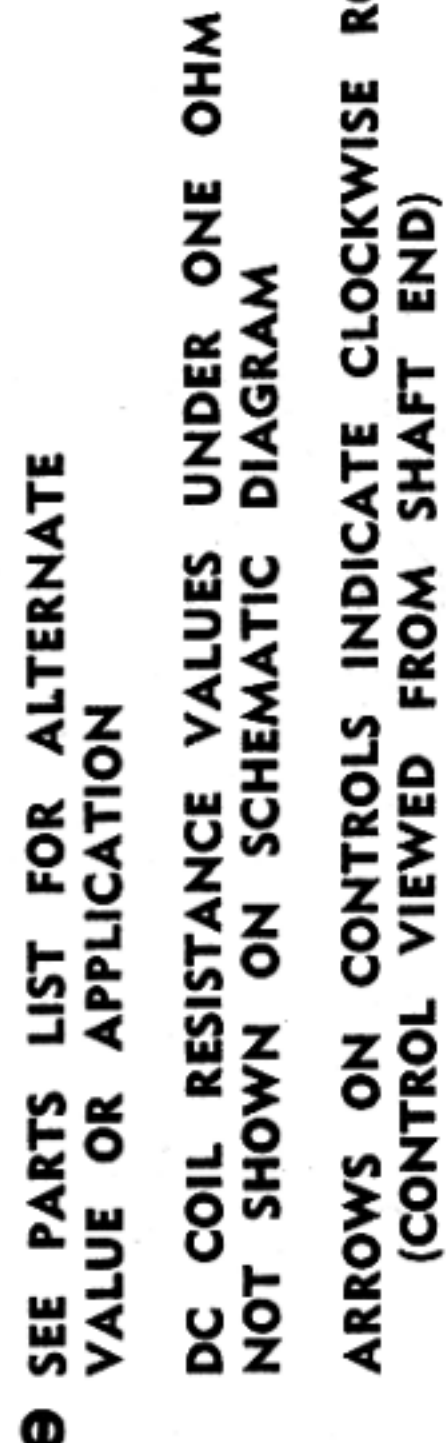
NAME	PART NO.	DESCRIPTION
Knob	46-2072	Tuning, Models B514 Series, B515 Series
Knob	46-2029	Tuning, Volume-On-Off, Model B509C
Knob	46-2030	Tuning, Volume-On-Off, Model B509P
Knob	46-2031	Tuning, Volume-On-Off, Model B509V
Knob	46-2032	Tuning, Volume-On-Off, Model B509F
Knob	46-2012	Tuning, Model B511 Series
Knob	46-2015	Volume, Models B514 Series
Knob	46-2013	Volume-On-Off, Model B511 Series
Knob	46-2016	Clock, Model B514 Series
Knob	46-2017	Clock, Model B515 Series
Knob	46-2028	Dial, Model B509 Series
Disc	27-259	Pointer Indicator, Model B509 Series
Scale	26-611	Radio Dial, Model B514 Series
Scale	26-619	Radio Dial, Model B515 Series
Crystal	192-264	Radio, Models B514, B515 Series
Crystal	192-265	Clock, Model B514 Series
Crystal	192-266	Clock, Model B515 Series
Cabinet	14-2460	Model B514F
Cabinet	14-2461	Model B514W
Cabinet	14-2462	Model B514C
Cabinet	14-2463	Model B514V
Cabinet	14-2466	Model B515B
Cabinet	14-2467	Model B515P
Cabinet	14-2468	Model B515G
Cabinet	14-2469	Model B515Y
Cabinet	14-2491	Model B509C
Cabinet	14-2492	Model B509P
Cabinet	14-2493	Model B509V
Cabinet	14-2494	Model B509F
Cabinet	14-2456	Model B511B
Cabinet	14-2457	Model B511P
Cabinet	14-2458	Model B511L
Cabinet	14-2459	Model B511V

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
Power Card Use BELDEN No. 8524 (Stranded) Available in Ten Colors
..... Use BELDEN No. 1765-B (6 Ft. Length)
..... Use BELDEN No. 1725-K (7 1/2 Ft. Length)

CHASSIS—BOTTOM VIEW





ZENITH MODELS B509C, F, P, V, B511B, L, P, V, B514C, F, V, W, B515B, G, P, Y (Ch. 5B04, 5B06, 5B10, 5B11)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.8Ω	12Ω	24Ω	†1000Ω	†1000Ω	2.7meg
V2	12BA6	2.7meg	0Ω	24Ω	36Ω	†1000Ω	†1000Ω	47Ω
V3	12AV6	6.8meg	0Ω	0Ω	12Ω	0Ω	500K	†470K
V4	50C5	150Ω	470K	36Ω	86Ω	470K	†1000Ω	†200Ω
V5	35W4	NC	TP	86Ω	120Ω	120Ω	115Ω	†

THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.

†	MEASURED FROM PIN 7 OF V5.	TP	TIE POINT
NC	NO CONNECTION		

WARD NOTATION SCHEMATIC

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